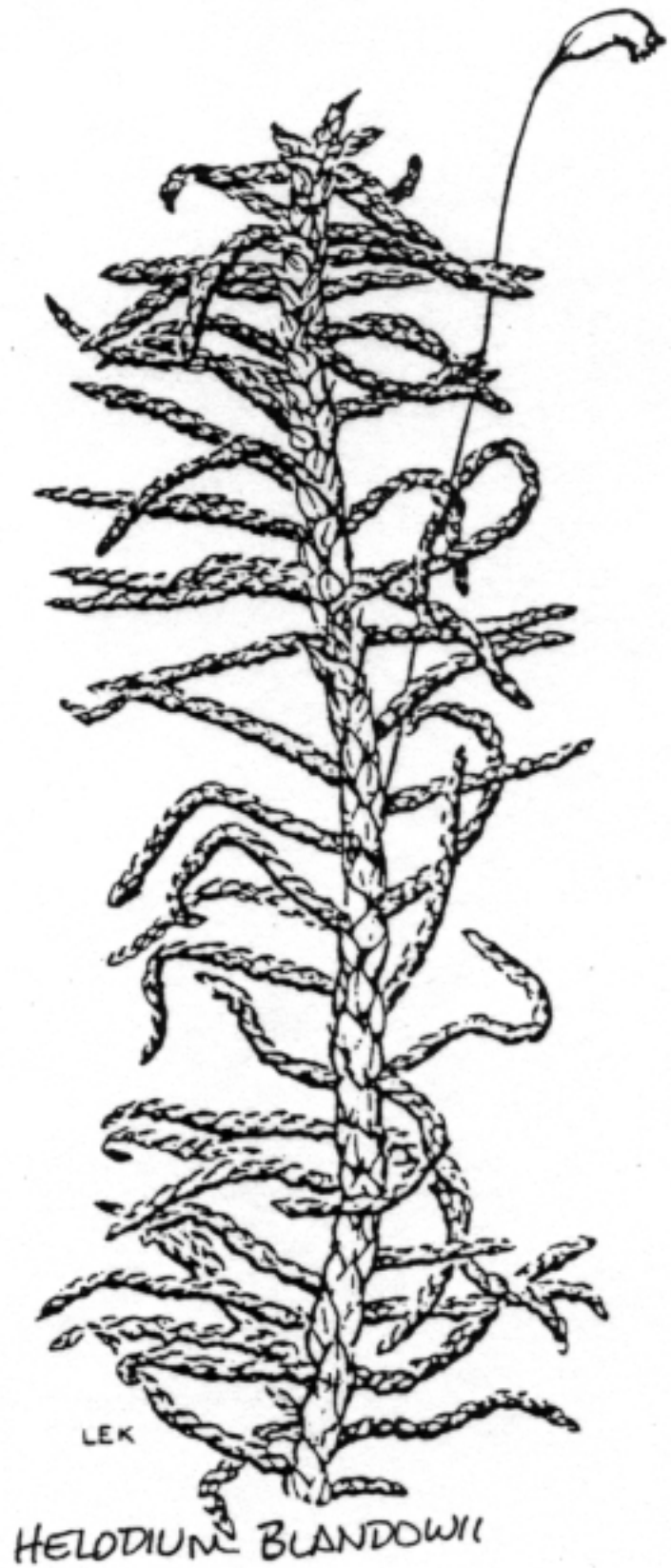# Appendix D

Interagency Species Management System

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Appendix D

Interagency Species Management System

Background

When the Survey and Manage mitigation was adopted in 1994 as part of the Northwest Forest Plan, 260 species were assigned to Category 1 (manage known sites). In an effort to compile all "known sites" of Survey and Manage species, searches were conducted in numerous herbaria, museums, and private collections, as well as state heritage program and agency databases and file information. In order to make it available for electronic retrieval and analysis, a database, called the "Known Sites Database," was developed to store this information. The collected information was input in the database in 1995 and updated in 1997 for field use. Users recognized, however, that improvements were needed to make full use of the collected data and other information from field surveys and agency management direction. An interagency team of biologists and data managers identified the kinds of information needed for various management questions and initiated a process to provide this information electronically.

Needs for the Species Database

The database is designed to help its users manage and monitor species throughout their range. For example, in watershed analysis, the users need a database that helps them consider locations of Survey and Manage species on lands administered by the Bureau of Land Management or Forest Service. Other user needs include the ability to sort the data and to interface with a Geographical Information System (GIS) to map species and their sites. Field units of both Agencies need to have the ability to retrieve and access the database to make timely inputs. Regional level data access was also needed to plan landscape level surveys and to evaluate species distribution.

Development of the Interagency Species Management System

Staff of the Regional Ecosystem Office, Forest Service, BLM, and U.S. Fish and Wildlife Service planned and developed an improved data management system. The system, called the Interagency Species Management System (ISMS), replaces the Known Sites Database. Among the first steps taken by the staff developing ISMS was an extensive search of public and private sector databases to build from an existing system that meets some data storage and retrieval objectives. The team initially adopted a system used by the Six Rivers National Forest (California) that met most needs discussed above.

The Six Rivers system was modified to include data fields that would accommodate all information collected under the various Survey and Manage Survey Protocols. Hardware was procured and systems modified to allow the database to be physically located at one central location (Forest Service Regional Office in Portland). Revisions to ISMS were done after each of two sets of tests to improve performance and its utility to field users. The system was also modified to allow access by BLM and Forest Service field office personnel in the tri-state area of Oregon, Washington, and northern California. There are plans to modify ISMS to allow the U.S. Fish and Wildlife Service, National Park Service, and other federal agencies to input and query data. Opportunities for public access will also be investigated.

In the fall of 1998, agency field offices and associated USDA Pacific Northwest Research Station (PNW) staff submitted information in addition to that in the Known Sites Database. The 1998 data submissions, along with information from the Known Sites Database, were incorporated into

ISMS. Because ISMS was originally established to store information on known sites of Category 1 species, data on species in other Survey and Manage categories was not consistently included in ISMS. However, there was inclusion of available data about Categories 3 and 4 species collected under contract, data from a red tree vole research effort, and some data on great gray owls. In late November 1998, ISMS included 18,000 records.

Two problems were identified during the preliminary analysis. Some of the data was submitted from multiple sources, resulting in some duplication of records. Also, the existing database design was complex and did not allow an easy method of displaying sites. These problems were resolved during the species analysis process by cross-referencing the data with other data sources, such as the Pacific Northwest regional extensive survey data files (which had incorporated the earlier Known Sites Database), and by considering ecological factors beyond the number and distribution of sites provided by ISMS.

In the fall of 1999, another regional update was completed and included data through November 10, 1999. Data collected by BLM and Forest Service (including PNW) field units was added for use in a species analysis in February and March 2000. The problems encountered in 1999 were significantly reduced by a special effort to avoid input of duplicate records and utilizing ISMS program improvements done in 1999. In November 1999, ISMS included 42,000 records.

Further work on the program and data management is ongoing to improve the performance and reliability of ISMS.

Design and Goal of ISMS

The ISMS is designed to allow field staff to input various field observation data, including species locations, the spatial accuracy of such locations, and information about species habitat and populations. ISMS also allows tracking of information about the implementation of the surveys, such as weather conditions at the time of data collection and areas surveyed (whether or not the species of interest was found).

The goal of ISMS is to enable field staff of the BLM and the Forest Service to readily share information on locations and habitats of species. This data sharing will allow analysis on the range of the species by both field and regional level staff. The GIS component of ISMS will allow users to establish points or areas from mapped information or from global positioning system readings. The GIS will allow users to query for species occurrences in various land allocations and habitat types, or specific to other data such as elevation. The GIS will also help users focus on areas where the species is of greatest concern by analyzing geographic ranges of a species and other types of information.

Status of Implementing ISMS

To meet the timeframe of the species analyses for the Draft Supplemental Environmental Impact Statement for Survey and Manage, ISMS has been populated centrally using regional data calls. In the year 2000, data input and management will be shifted to the BLM and Forest Service field offices. All data on Survey and Manage species in the database will be accessible to Forest Service and BLM offices at field and regional levels. The ISMS database will be used and updated by field office staff on a frequent basis. In 2000 and 2001, it is expected that there will be a considerable increase in the amount of information in ISMS as field units add data to fields not captured for regional purposes and add new sites found during field surveys or obtained from other reliable sources.

Data includes the point location of the species, or the center of a polygon (irregular shape) showing the area occupied by the species (the site) and other data fields associated with habitat and population information as it becomes available. The current version of ISMS relies on GIS

software that stores the spatial files at each field office. Periodic compilations of these files will be made at the regional level and will be available to the ISMS users in the field offices for regional analyses and views of the known range of a species in the area of the Northwest Forest Plan. Improvements in data quality and content are expected as the field units become familiar with ISMS. As user requirements dictate and technology and budgets allow, we expect improvements in the capability of ISMS.